

CITY OF MILPITAS

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2016 CALGreen Non-Residential Mandatory Measures Checklist

This checklist applies to newly constructed buildings, building additions of 1,000 square feet or greater, and/or building alterations with a permit valuation of \$200,000 or above. Code sections relevant to additions and alterations shall only apply to the portions of the building being added or altered within the scope of the permitted work.

Measures in this checklist apply to both newly constructed buildings and additions and alterations unless noted with the following banner:

[N] = Measures applicable to newly constructed buildings only

[AA] = Measures applicable to additions and alterations only

California Green Building Standards Code = CGBSC

California Electrical Code = CEC

California Energy Code = CEnC

CONSTRUCTION DOCUMENTS AND INSTALLATION VERIFICATION

1. Construction documents and other data shall be submitted with each application for a permit CGBSC 102.1.
2. Construction documents shall be of sufficient clarity to indicate the location, nature and scope of the proposed green building feature and show it will conform to the provisions of the California Green Building Standards Code and other codes, relevant laws, ordinances, rules and regulations as determined by the City of Milpitas Building Department. CGBSC 102.2.
3. Documentation of conformance for applicable green building measures shall be provided to the enforcing agency CGBSC 102.3.

Mandatory Feature or Measure

Required

PLANNING AND DESIGN

Site Development 5.106

Storm water pollution prevention. Newly constructed projects and additions which disturb less than one acre of land shall prevent the pollution of storm water runoff from the construction activities through one or more of the following measures:

1. **Local ordinance.** Comply with a lawfully enacted storm water management and/or erosion control ordinance.
2. **Best management practices (BMP).** Prevent the loss of soil through wind or water erosion by implementing an effective combination of erosion and sediment control and good housekeeping BMP's.

Projects One Acre or More SWPPP: Newly constructed projects or additions shall comply with Milpitas Municipal Code Title 2 Chapter 13 for erosion and sediment controls, the City of Milpitas Enforcement Response Plan for Construction Site Control, and the California Regional Water Quality Control Board San Francisco Bay Region Municipal Regional Stormwater NPDES Permit requirements.

Short-term bicycle parking. If the new project or an addition or alteration is anticipated to generate visitor traffic, provide permanently anchored bicycle racks within 200 feet of the visitors' entrance, readily visible to passers-by, for 5% of new visitor motorized vehicle parking spaces being added, with a minimum of one two-bike capacity rack. CGBSC 5.106.4.1.1.

Exception:

1. Additions or alterations which add nine or less visitor vehicular parking spaces.

Long-term bicycle parking. For new buildings with over 10 tenant-occupants or for additions or for additions or alterations that add 10 or more tenant vehicular parking spaces, provide secure bicycle parking for 5% of the tenant vehicular parking spaces being added, with a minimum of one space CGBSC 5.106.4.1.2.

2016 CALGreen Non-Residential Mandatory Measures Checklist (Cont'd)

Mandatory Feature or Measure	Required
<p>Designated parking. In new projects or additions or alterations that add 10 or more vehicular parking spaces, provide designated parking for any combination of low-emitting, fuel efficient, and carpool/van pool vehicles as shown on Table 5.106.5.2 CGBSC 5.106.5.2.</p> <p>Parking stall marking. Paint "CLEAN AIR/ with lower edge of last word aligned with the end of the stall striping. VANPOOL/EV" CGBSC 5.106.5.2.1.</p>	
<p>Electric vehicle (EV) charging. [N] Construction shall comply with Section 5.106.5.3.1 or 5.106.5.3.2 to facilitate future installation of electric vehicle supply equipment (EVSE) in compliance with California Building Code (CBC) and California Electrical Code (CEC).</p>	
<p>Single charging space requirements. [N] When only a single charging space is required per Table 56.106.5.3.3, a raceway is required to be installed at the time of construction and shall be installed in accordance with CEC. Construction plans and specifications shall comply with CGBSC 5.106.5.3.1.</p>	
<p>Multiple charging space requirements. [N] When multiple charging spaces are required per Table 56.106.5.3.3, raceway(s) is/are required to be installed at the time of construction and shall be installed in accordance with CEC. Construction plans and specifications shall comply with CGBSC 5.106.5.3.2.</p>	
<p>Identification. [N] The service panel or subpanel(s) circuit directory shall identify the reserved overcurrent protective device space(s) for future EV charging as "EV CAPABLE". The raceway termination location shall be permanently and visibly marked as "EV CAPABLE" CGBSC 5.106.5.3.4.</p>	
<p>Light pollution reduction. [N] Outdoor lighting systems shall be designed and installed to comply with the following CGBSC 5.106.8:</p> <ol style="list-style-type: none"> 1. The minimum requirements in the California Energy Code for Lighting Zones 1-4 as defined in Chapter 10 of the California Administrative Code; and 2. Backlight, Uplight and Glare (BUG) ratings as defined in IES TM-15-11; and 3. Allowable BUG ratings not exceeding those shown in Table 5.106.8, or <p>Comply with local ordinance lawfully enacted pursuant to Section 101.7, whichever is more stringent.</p> <p>Exception: [N]</p> <ol style="list-style-type: none"> 1. Luminaires that qualify as exceptions in Section 140.7 of the California Energy Code. 2. Emergency lighting. 3. Building façade meeting the requirements in Table 140.7-B of the CEnC, part 6. 4. Custom lighting features as allowed by the local enforcing agency as permitted by CGBSC 101.8 (AMMR). 	
<p>Grading and paving. Construction plans shall indicate how site grading or a drainage system will manage all surface water flows to keep water from entering buildings CGBSC 5.106.10.</p> <p>Exception:</p> <ol style="list-style-type: none"> 1. Additions and alterations not altering the drainage path. 	
ENERGY EFFICIENCY	
<p>For the purposes of mandatory energy efficiency standards in this code, the California Energy Commission will continue to adopt mandatory standards CGBSC 5.201.1.</p>	
WATER EFFICIENCY AND CONSERVATION	
Indoor Water Use (5.303)	
<p>Water Meters - Separate sub-meters or metering devices shall be installed for the uses described below CGBSC 5.303.1:</p>	
<p>New buildings or additions in excess of 50,000 square feet.</p> <ol style="list-style-type: none"> 1. For each individual leased, rented, or other tenant space within the building projected to consume more than 100 gal/day, including, but not limited to, spaces used for laundry or cleaners, restaurant or food service, medical or dental office, laboratory, or beauty salon or barber shop. 	

2016 CALGreen Non-Residential Mandatory Measures Checklist (Cont'd)

Mandatory Feature or Measure	Required
<p>2. Where separate submeters for individual building tenants are unfeasible, for water supplied to the following subsystems:</p> <ul style="list-style-type: none"> a) Makeup water for cooling towers where flow through is greater than 500 gpm. b) Makeup water for evaporative coolers greater than 6gpm. c) Steam and hot-water boilers with energy input more than 500,000 Btu/h. 	
<p>Excess consumption: A separate submeter or metering device shall be provided for any tenant within a new building or within an addition that is projected to consume more than 1,000 gal/day CGBSC 5.303.1.2.</p>	
<p>Water conserving plumbing fixtures and fittings. Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) in new construction, new fixtures in additions or areas of alteration to the building shall comply with the following CGBSC 5.303.3:</p>	
<p>Water closets: The effective flush volume of all water closets shall not exceed 1.28 gpf. Tank-type water closets shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Tank-Type Toilets CGBSC 5.303.3.1. Note: The effective flush volume of dual flush toilets is defined as the composite, average flush volume of two reduced flushes and one full flush.</p>	
<p>Urinals: The effective flush volume of wall mounted urinals shall not exceed 0.125 gpf. The effective flush volume of floor mounted or other urinals shall not exceed 0.5gpf. CGBSC 5.303.3.2.</p>	
<p>Single showerheads: Showerheads shall have a max. flow rate of not more than 2.0 gpm at 80 psi. Showerheads shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Showerheads CGBSC 5.303.3.3.1.</p>	
<p>Multiple showerheads Serving One Shower: When a shower is served by more than one showerhead, the combined flow rate of all showerheads and/or other shower outlets controlled by a single valve shall not exceed 2.0 gallons per minute at 80 psi, or the shower shall be designed to allow only one shower outlet to be in operation at a time. Note: A hand-held shower shall be considered a showerhead. CGBSC 5.303.3.3.2.</p>	
<p>Faucets and fountains: CGBSC 5.303.3.4. Non-residential lavatory faucets. Lavatory faucets shall have a maximum flow rate of not more than 0.5 gpm at 60 psi. Kitchen faucets. Kitchen faucets shall have a maximum flow rate of not more than 1.8 gpm at 60psi. Kitchen faucets may temporarily increase the flow above the maximum rate, but not to exceed 2.2 gpm at 60 psi, and must default to a max. flow rate of 1.8 gpm at 60 psi. Wash fountains. Wash fountains shall have a maximum flow rate of not more than 1.8 gpm/20 [rim space (inches) at 60 psi]. Metering faucets. Metering faucets shall not deliver more than 0.20 gallons per cycle. Metering faucets for wash fountains. Metering faucets for wash fountains shall have a maximum flow rate of not more than 0.20 gallons per cycle/20 [rim space (inches) at 60psi].</p>	
<p>Outdoor Water Use (5.304)</p>	
<p>Outdoor water use in landscape areas equal to or greater than 500 sq ft or in rehabilitated landscape projects equal to or greater than 2,500 sq ft. One of the following shall apply:</p> <ul style="list-style-type: none"> 1. A local water efficient landscape ordinance at least as effective in conserving water as the updated model ordinance adopted by Department of Water Resources (DWR). 2. The California Department of Water Resources Model Water Efficient Landscape Ordinance (MWELO). 	
<p>Outdoor water use in landscape areas of 2500 sq ft or less. Comply with the performance requirements of MWELO or conform to the prescriptive compliance measures contained in MWELO's Appendix D.</p>	

2016 CALGreen Non-Residential Mandatory Measures Checklist (Cont'd)

Mandatory Feature or Measure	Required
Graywater or rainwater use in landscape areas: Any lot that has less than 2,500 sq ft of landscape and meets the lot or parcel's landscape water requirement entirely with treated or untreated graywater or through stored rainwater captured on site is subject only to Appendix section (5) - CGBSC 5.304.5.	
MATERIAL CONSERVATION AND RESOURCE	
Water Resistance and Moisture Management (5.407)	
Weather Protection: Provide a weather-resistant exterior wall and foundation envelope as required by California Building Code Section 1403.2 and California Energy Code 150, manufacturer's installation instructions or local ordinance, whichever is more stringent.	
Moisture Control: Employ moisture control measures by the following methods:	
Sprinklers: Design and maintain landscape irrigation systems to prevent spray on structures.	
Entries and Openings: Design exterior entries and openings subject to foot traffic or wind-driven rain to prevent water intrusion into buildings as follows:	
Exterior Door Protection: Primary exterior entries shall be covered to prevent water intrusion by using non-absorbent floor and wall finishes within at least 2 feet around and perpendicular to such openings plus at least one of the following: <ul style="list-style-type: none"> . An installed awning at least 4 feet in depth. . The door is protected by a roof overhang at least 4 feet in depth. . The door is recessed at least 4 feet. . Other methods which provided equivalent protection. 	
Flashing: Install flashings integrated with a drainage plane.	
Construction Waste Reduction, Disposal and Recycling (5.408)	
Construction waste management: Recycle and/or salvage for reuse a minimum of 65% of the non-hazardous construction and demolition waste generated at the site. This is achieved by submitting a Waste Management Plan for approval by the Building and Safety Department prior to construction or demolition permit issuance and providing documentation to demonstrate compliance with the Waste Management Plan after completion of demolition or construction prior to final inspection.	
Waste Management Company: Utilize a waste management company that can provide verifiable documentation that the percentage of construction and demolition waste material diverted from the landfill complies.	
Documentation: Documentation shall be provided to the enforcing agency prior to final which demonstrates compliance. Provide documentation to the City of Milpitas Solid Waste.	
Universal Waste (A): Additions and alterations to a building or tenant space that meet the scoping provisions in the CGBSC section 301.3 for nonresidential additions and alterations, shall require verification that Universal Waste items such as fluorescent lamps and ballast and mercury containing thermostats as well as other California prohibited Universal Waste materials are disposed of properly and are diverted from landfills. A list of prohibited Universal Waste materials shall be included in the construction documents.	
Excavated soil and land clearing debris. 100% of trees, stumps, rocks and associated vegetation and soils resulting primarily from land clearing shall be reused or recycled.	
Building Maintenance and Operation (5.410)	
Recycling by occupants: Provide readily accessible areas that serve the entire building and are identified for the depositing, storage, and collection of non-hazardous materials for recycling per CGBSC 5.410.1.	
Additions [A]: All additions conducted within a 12-month period under single or multiple permits, resulting in an increase of 30% or more in floor area, shall provide recycling areas on site. Exceptions: Additions within a tenant space resulting in less than a 30% increase in the tenant space floor area.	

2016 CALGreen Non-Residential Mandatory Measures Checklist (Cont'd)

Mandatory Feature or Measure	Required
Commissioning [N]: For new buildings 10,000 square feet and over, building commissioning shall be included in the design and construction process of the building project to verify that the building systems and components meet the owner's or owner representative's project requirements. Commissioning shall be performed in accordance with the CGBSC 5.410.2 by trained personnel with experience on projects of comparable size and complexity. All occupancies shall comply with the California Energy Code as prescribed in Section 120.8. Commissioning Requirements shall include those items listed in the CGBSC Section 5.410.2.	
Owner's Project Requirements (OPR) [N]: The expectations and requirements of the building appropriate to its phase shall be documented before the design phase of the project begins. The documentation shall include those items listed in the CGBSC Section 5.410.2.1.	
Basis of Design (BOD) [N]: A written explanation of how the design of the building systems meets the OPR shall be completed at the design phase of the building project. The Basis of Design documentation shall include those items listed in the CGBSC Section 5.410.2.2.	
Commissioning plan [N]: Prior to permit issuance a commissioning plan shall be completed to document how the project will be commissioned. The commissioning plan shall include those items listed in the CGBSC Section 5.410.2.3.	
Functional performance testing [N]: Functional performance tests shall demonstrate the correct installation and operation of each component, system, and system-to-system interface in accordance with the approved plans and specifications. Functional performance testing reports shall contain information addressing each of the building components tested, the testing methods utilized, and include any readings and adjustments made.	
Documentation and Training: A systems manual and systems operations training are required, including Occupational Safety and Health Act requirements in the California Code of Regulations Title 8, Section 5142, and other related regulations.	
Systems manual [N]: The Systems Manual, which includes documentation of the operational aspects of the building, shall be delivered to the building owner or representative and facilities operator. The systems manual shall include those items listed in the CGBSC Section 5.410.2.5.1.	
Systems operations training [N]: A program for training of the appropriate maintenance staff for each equipment type and/or system shall be developed and documented in the commissioning report. The required documentation shall include those items listed in the CGBSC Section 5.410.2.5.2.	
Commissioning report [N]: A report of commissioning process activities undertaken through the design and construction phases of the building project shall be completed and provided to the owner or representative.	
Testing and adjusting: Testing and adjusting of systems shall be required for new buildings less than 10,000 square feet or new systems to serve an addition or alteration subject to the CGBSC Section 303.1.	
Systems: Develop a written plan of procedures for testing and adjusting systems. Systems included for testing and adjusting shall be those as listed in the CGBSC Section 5.410.4.2.	
Procedures. Perform testing and adjusting procedures in accordance with manufacturer's specifications and applicable standards on each system CGBSC 5.410.4.3.	
HVAC balancing. Before a new space-conditioning system serving a building or space is operated for normal use, the system should be balanced in accordance with the procedures defined by one of the standards as listed in CGBSC Section 5.410.4.3.1.	
Reporting. After completion of testing, adjusting and balancing, provide a final report of testing signed by the individual responsible for performing these services.	
Operation and maintenance (O&M) manual. Provide the building owner with detailed operating and maintenance instructions and copies of guaranties/warranties for each system prior to final inspection.	
Inspections and reports. Include a copy of all inspection verifications and reports required by the enforcing agency.	

2016 CALGreen Non-Residential Mandatory Measures Checklist (Cont'd)

Mandatory Feature or Measure	Required
ENVIRONMENTAL QUALITY	
Fireplaces (5.503)	
Install only a direct-vent sealed-combustion gas or sealed wood-burning fireplace, or a sealed woodstove or pellet stove, and refer to residential requirements in California Energy Code, Title 24, Part 6, Subchapter 7, Section 150. Wood stoves and pellet stoves shall comply with U.S. EPA Phase II emission limits where applicable.	
<p>Bay Area Air Quality Management District: Effective November 1, 2016 – “No wood-burning devices of any kind may be installed in new homes or buildings being constructed in the Bay Area”.</p> <p>“Bay Area residents who begin a chimney or fireplace remodeling project that costs over \$15,000 and requires a building permit will only be allowed to install a gas-fueled, electric or EPA-certified device”.</p>	
Pollutant Control (5.504)	
The permanent HVAC system shall only be used during construction if necessary to condition the building or areas of addition or alteration within the required temperature range for material and equipment installation. If the HVAC system is used during construction, use return air filters with a MERV of 8. Replace all filters immediately prior to occupancy, or if the building is occupied during alteration, at the conclusion of construction. CGBSC 5.504.1.	
Duct openings, equipment, and other related air distribution component openings shall be covered during storage and construction until final start up to reduce the amount of dust, water, and debris which may enter the system. CGBSC 5.504.3.	
Adhesives, sealants and caulks shall be compliant with VOC limits per CGBSC 5.504.4.1.	
Paints, stains and other coatings shall be compliant with VOC limits per CGBSC 5.504.4.3.	
Aerosol paints and coatings shall be compliant with Product-Weighted MIR limits for ROC, VOC and other toxic compounds limits per sec. 5.504.4.3.1.	
Carpet and carpet systems shall be compliant with the testing and product requirements per CGBSC 5.504.4.4, 5.504.4.4.1, 5.504.4.4.2.	
Hardwood plywood, particleboard and medium density fiberboard composite wood products used on the interior or exterior of the building shall meet the formaldehyde limits per CGBSC 5.504.4.5.	
For 80% of floor area receiving resilient flooring, installed resilient flooring shall meet the requirements per CGBSC 5.504.4.6.	
Documentation shall be provided to the City building inspector verifying that compliant finish materials have been used.	
<p>Filters. In mechanically ventilated buildings, provide regularly occupied areas of the building with air filtration media for outside and return air prior to occupancy that provides at least a MERV of 8. Recommendations for maintenance with filters of the same value shall be included in the operation and maintenance manual.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. An ASHRAE 10% to 15% efficiency filter shall be permitted for an HVAC unit meeting 2013 California Energy Code having 60,000 Btu/h or less capacity per fan coil, if the energy use of the air delivery system is 0.4 W/cfm or less at design air flow. 2. Existing mechanical equipment. 	
Labeling. Installed filters shall be clearly labeled by the manufacturer indicating the MERV (Minimum Efficiency Reporting Value) rating.	
Environmental tobacco smoke (ETS) control. Where outdoor areas are provided for smoking, prohibit smoking within 25 feet of building entries, outdoor air intakes and operable windows and within buildings CGBSC 5.504.7.	
Indoor Air Quality (5.506)	

2016 CALGreen Non-Residential Mandatory Measures Checklist (Cont'd)

Mandatory Feature or Measure	Required
Outside Air Delivery: For Mechanically or naturally ventilated spaces in buildings, meet the minimum requirements of Section 120.1 of the 2016 California Energy Code, or the applicable local code, whichever is more stringent, and Division 1, Chapter 4 of CCR, Title 8.	
Carbon dioxide (CO₂) monitoring. For buildings or additions equipped with demand control ventilation, CO ₂ sensors and ventilation controls shall be specified and installed in accordance with 2016 California Energy Code Section 120.1(c)4.	
Environmental Comfort (5.507)	
Acoustical Control. Employ building assemblies and components with Sound Transmission Class (STC) values using one of the following methods: Exception: Buildings with few or no occupants or where occupants are not likely to be affected by exterior noise, as determined by the enforcement authority, such as factories, stadiums, storage, enclosed parking garage structures, and utility buildings.	
Prescriptive method - Exterior noise transmission. Wall and roof ceiling assemblies making up the building or addition envelope or altered envelope shall meet a composite STC rating of at least 50, or a composite OITC rating of no less than 40, or OITC of 30 in the following locations CGBSC 5.507.4.1: <ol style="list-style-type: none"> 1. Within the 65 CNEL noise contour of an airport. 2. Within the 65 CNEL or L_{dn} noise contour of a freeway, railroad, industrial source or fixed-guideway source. Noise Exposure Where Noise Contours Are Not Readily Available: Buildings exposed to a noise level of 65 dB L _{eq} -1-hr during any hour of operation shall have building, addition or alteration exterior wall and roof-ceiling assemblies exposed to the noise source meeting a composite STC rating of at least 45 (or OITC 35), with exterior windows of a minimum STC of 40 (or OITC 30).	
Performance method: For buildings located as defined in sec. 5.507.4.1 (Prescriptive) or 5.507.4.1.1 (Noise Contour Not Available), wall and roof-ceiling assemblies exposed to the noise source making up the building or addition envelope or altered envelope shall be constructed to provide an interior noise environment attributable to exterior sources that does not exceed an hourly equivalent noise level (L _{eq} -1Hr) of 50 dBA in occupied areas during any hour of operation. Documentation of Compliance: An acoustical analysis documenting complying interior sound levels shall be prepared by personnel approved by the architect or engineer of record.	
Interior sound transmission. Wall and floor-ceiling assemblies separating tenant spaces and tenant spaces and public places shall have a STC of at least 40.	
Outdoor Air Quality (5.508)	
Ozone depletion and greenhouse gas reductions. Installations of HVAC, refrigeration and fire suppression equipment shall not contain Chlorofluorocarbons (CFCs) and Halons.	
Supermarket refrigerant leak reduction. New commercial refrigeration systems (including both new facilities and the replacement of existing refrigeration systems in existing facilities) installed in retail food stores 8,000 square feet or more conditioned area, and that utilize either refrigerated display cases, or walk-in coolers or freezers connected to remote compressor units or condensing units and contain high-global-warming potential (High-GWP) refrigerants with a GWP of 150 or greater, shall comply with the following:	
Refrigerant piping. Piping shall be installed to be accessible for leak protection and repairs. Piping runs using threaded pipe, copper tubing with an outside diameter (OD) less than ¼", flared tubing connections and short radius elbows shall not be used in refrigerant systems except as noted in sec. 5.508.2.1.1, 5.508.2.1.2, 5.508.2.1.3, and 5.508.2.1.4.	
Valves. Valves and fittings shall comply with the requirements in CGBSC Section 5.508.2.2.	

2016 CALGreen Non-Residential Mandatory Measures Checklist (Cont'd)

Mandatory Feature or Measure	Required
Refrigerated service cases. Refrigerated service cases holding food products containing vinegar and salt shall have evaporator coils of corrosion-resistant material, such as stainless steel; or be coated to prevent corrosion from these substances. Consideration shall be given to the heat transfer efficiency of coil coating to maximize energy efficiency.	
Refrigerant receivers. Refrigerant receivers with capacities greater than 200 pounds shall be fitted with a device that indicates the level of refrigerant in the receiver.	
Pressure testing. The system shall be pressure tested during installation prior to evacuation and charging per CGBSC Section 5.508.2.5.	
Evacuation. The system shall be evacuated after pressure testing and prior to charging per CGBSC Section 5.508.2.6.	
INSTALLER AND SPECIAL INSPECTOR QUALIFICATIONS	
Qualifications (702)	
HVAC system installers are trained and certified in the proper installation of HVAC systems including ducts and equipment by a nationally or regionally recognized training or certification program.	
Special inspectors employed by the owner or owner's agent shall demonstrate competence for the particular type of inspection task to be performed and shall have a certification from a recognized state, national, or international association in the area closely related to the primary job function. Note: Special Inspectors shall be independent entities with no financial interest in the materials or the project they are inspecting for compliance with the CGBSC.	
Verifications (703)	
Documentation used to show compliance with the CGBSC shall include but is not limited to construction documents, plans, specifications, builder or installer certification, inspection reports, or other methods acceptable to the enforcing agency, which demonstrate substantial conformance.	